

We claim:

1. A solar concentrator module with a bidimensional parabolic profile geometry, comprising one or more self-supporting rigid panels having a parabolic cross section and a rectilinear longitudinal extension and a thin reflecting surface mounted to the panel, said reflecting surface having a geometry to concentrate incident radiation of the sun along a longitudinal axis corresponding to an axis of symmetry of a receiving tube within which a fluid to be heated by the incident radiation is flowing.
2. The module according to claim 1, characterized in that the panels have a sandwich structure having a honeycomb central core and two thin outer skins of a high resistance material.
3. The module according to claim 2, characterized in that the skins have a thermal expansion coefficient similar to that of the reflecting surface, whereby panel deformations are minimized.
4. The module according to claim 1, 2 or 3 characterized in that the panels have a convex face mounted to a longitudinal tubular support element, the tubular support element being provided with means for rotating the support element around an axis to move the reflecting surfaces for following motion of the sun.
5. The module according to claim 4, characterized in that at least one panel has a honeycomb structure having a variable thickness which decreases from a parabola apex towards longitudinal edges, the panel being mounted to the tubular support element at a central zone having a greater thickness.
6. The module according to claim 4, characterized in that at least one panel has a honeycomb structure with a constant thickness, the panel being mounted to the tubular support element by transverse support fins.
7. The module according to claim 2 or 3, characterized in that the panels are each about 3 meters in length, the panel honeycomb central core comprises aluminium with a thickness of 25mm and is covered by 0.5 mm thick steel skins.

8. The module according to claim 1, 2, or 3, wherein the reflecting surface is fastened to a concave surface of the panel by an epoxidic or acrylic glue.

5 9. The module according to claim 2 or 3, characterized in that skins are of aluminium with a layer of glass fibres inserted between a concave side of the skin and the thin reflecting surface.

10 10. An array of modules according to claim 2 or 3, characterized in that the array is of a length of up to 100 meters and has a single motor placed at a half length of a support tube to rotate the array.

11. A plurality of panels according to claim 1, 2 or 3 comprising a solar plant for the production of energy.